

# Site

# Team

# Evaluation

# Prioritization

EPA Region 5 Records Ctr.



354502

Steel City National Bank  
Chicago Heights, Cook County  
ILD 005246590  
IEPA 0310450024

SF / HRS

25 September 1998



## CERCLA Report



**Illinois Environmental  
Protection Agency**

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# TABLE OF CONTENTS

## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION</b>	<b>1.</b>
<b>2.0</b>	<b>SITE BACKGROUND</b>	<b>1.</b>
2.1	Site Description	1.
2.2	Site History	2.
2.3	Applicability of Other Statutes	4.
<b>3.0</b>	<b>STEP ACTIVITIES</b>	<b>5.</b>
3.1	Site Reconnaissance Activities and Interviews	5.
3.2	Sampling Activities	6.
3.3	Sample Results	9.
<b>4.0</b>	<b>SITE SOURCES</b>	<b>7.</b>
4.1	Waste Piles	7.
4.2	Contaminated Soil	8.
<b>5.0</b>	<b>MIGRATION PATHWAYS</b>	<b>8.</b>
5.1	Surface Water Pathway	8.
5.2	Soil Exposure Pathway	9.
5.3	Groundwater Pathway	10.
5.2	Air Pathway	11.
<b>6.0</b>	<b>ADDITIONAL RISK BASED OBJECTIVES</b>	<b>11.</b>
6.1	Introduction	11.
6.2	Tiered Approach To Corrective Action Objectives (TACO)	11.
6.2.1	TACO Soil Objectives	12.
6.2.2	IEPA Sediment Objectives	12.

## **ALL FIGURES & TABLES ARE FOUND AT END OF TEXT**

### **FIGURES**

1. ILLINOIS STATE LOCATION MAP
2. SITE LOCATION MAP
3. SITE LAYOUT MAP (IDOT 1993 Aerial Photograph)
4. SITE LAYOUT & SAMPLE LOCATION MAP

### **TABLES**

1. SAMPLE DESCRIPTIONS & LOCATIONS
2. SOIL SAMPLE SUMMARY
3. INORGANIC SOIL SAMPLE SUMMARY
4. SEDIMENT SAMPLE SUMMARY
5. TCLP & pH SAMPLE SUMMARY

### **APPENDICES**

#### **VOL I**

- A. HISTORIC AERIAL PHOTOGRAPHS
- B. SAMPLE PHOTOS
- C. TARGET COMPOUND LIST / TARGET ANALYTE LIST

#### **VOL II**

- D. ANALYTICAL RESULTS

## **SECTION I -- INTRODUCTION**

The Steel City National Bank site was added to the Comprehensive Environmental Response, Compensation and Liability Act Information System (CERCLIS) on June 1, 1980, as a result of the company's submittal of a Notification of Hazardous Waste Site Form pursuant to Section 103c of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980. A CERCLA Preliminary Assessment (PA) was conducted on July 1, 1984 by Illinois Environmental Protection Agency (IEPA) personnel and a Site Inspection (SI) including sampling was conducted on September 1, 1984 by the U.S. EPA's Field Investigation Team, Ecology and Environment, Incorporated. A CERCLA Focused Site Inspection Prioritization (FSIP) without the benefit of field sampling was conducted on September 29, 1995 by the U.S. EPA's Field Investigation Team, Ecology and Environment, Incorporated.

The purpose of this CERCLA Site Team Evaluation Prioritization (STEP) is to fill any information gaps that may have existed in previous CERCLA investigations and provide additional analytical data in areas identified during these investigations. The additional information will identify any new threats to human health and/or the environment through migration pathways not previously investigated.

## **2.0 SITE BACKGROUND**

### **2.1 Site Description**

The site known as Steel City National Bank occupies 13 acres in an industrial area on the east side of Chicago Heights, Cook County, Illinois (figure 1). The site is rectangular with sides



approximately 1300 feet east to west and approximately 450 feet north to south. The Elgin, Joliet and Eastern railroad tracks and switching area form the northern boundary of the site and provided rail access to the facility during its operation. A single track spur and paved access road from the switching area form the sites southern boundary. Third Creek, flowing south to north, forms the eastern boundary. State Street is the western boundary. The entrance is on the west side along State Street. Offices, the main plant, dross piles, the settling lagoon, and finally third Creek proceed towards the east (figure 2).

The topography of the area is predominantly flat with steep bluffs dropping down to Third Creek. Surface water drainage consists of two separate ditches originating on the north and south sides of the site and flowing into Third Creek. Third Creek flows north past the site and then turns westward to State Street, .5 miles away, where it becomes intercepted and channelized at various points by storm water sewers.

## **2.2 Site History**

The site was originally operated as Hall Aluminum. It is not known when operations began, but Hall Aluminum reclaimed aluminum and zinc from scrap metal until 1986 after filing for bankruptcy. Steel City National Bank acquired the site as a result of the bankruptcy. In 1994 the St. Bethel Missionary Baptist Church bought the property from the Steel City National Bank. The site is currently idle, with only one small parcel leased to a metal fabrication & repair company.

During Hall Aluminum's site operations, skim wastes and other scrap metal wastes were piled into dross piles east of the main plant. Low pH quench waters from the reclaiming processes were discharged into a lime-lined drainage ditch along the north side of the site. The ditch emptied into an on site settling lagoon, which in turn overflowed into Third Creek. In 1984, Hall Aluminum changed to a contained neutralizing system to neutralize the quench waters prior to discharging into the drainage ditch.

Most of the main plant has been demolished. However, building debris including transite asbestos from ceiling panels still remains. Two large dross waste piles remain. The first pile is approximately one acre in size and has an estimated volume of 16,000 cubic yards. The majority of the pile consists of a large sand sized granular material. Chunks of scrap metal, aluminum, zinc, slag and other metallic wastes are scattered throughout the pile. Along the base are piles of building debris primarily bricks, concrete and asphalt road debris. The second pile is 0.5 acres in size and has a volume of approximately 2,700 cubic yards. This pile is located along the southern boundary in the southeast corner of the site. The pile has the same composition as the first, but has more building debris mixed into it.

Less than one fifth of the former 2.5 acre settling lagoon remains. The rest has been filled in with dump truck sized piles of concrete debris. Immediately east of the lagoon is a small 0.2 acre wetland area that is along the discharge path to Third Creek. The wetland has railroad ties, wood and brush debris piled along the north edge. Historic aerial photographs are located in Appendix A of this report.

### **2.3 Applicability of Other Statutes**

According to Illinois EPA files, the Hall Aluminum facility was not required to have Resource Conservation Recovery Act (RCRA) permits to operate, as they were non-hazardous waste generators. Given the nature of the activities that occurred at the Hall Aluminum facility, it is not believed that the facility is subject to the provisions of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the Atomic Energy Act (AEA) or the Uranium Tailings Radiation Control Act (UMTRCA).

## **SECTION III -- STEP ACTIVITIES**

### **3.1 Site Reconnaissance Activities & Interviews**

In the fall of 1997, the IEPA conducted a site reconnaissance of the Steel City National Bank site. Members of the St. Bethel Missionary Baptist Church, were in attendance throughout the inspection. A small company was renting a portion of the former facility to repair automobile parts racks for local automobile manufacturers. Approximately 15 people were employed by the company.

During the reconnaissance, the two drainage ditches were located. The ditch along the north fence line had a slight flow to the east. The south ditch was dry. Both ditches drained into Third Creek. A large quantity of used tires in many sizes were scattered throughout the site. After the reconnaissance visit, arrangements were made with the IEPA's Used Tire Unit to conduct a one-

time removal of the tires.

A pre-sampling screening inspection was conducted utilizing an X-Ray Fluorescence (XRF) & Global Positioning Satellite (GPS) system to help characterize site conditions and to identify potential sample locations. The two dross waste piles were examined to identify locations with the highest metal concentrations.

### **3.2 Sampling Activities**

CERCLA STEP sampling activities occurred on June 3 and 4, 1998. Six sediment samples, 12 soil samples and three TCLP samples were collected from the site. The 12 soil samples were collected from the areas identified during the screening activities conducted in the spring of 1998. The TCLP samples were collected from the two waste piles in areas identified with the highest metal concentrations. *The sediment samples were collected from key locations along Third Creek and along the two drainage ditches.* Table 1 describes and identifies the locations of the samples. Appendix B contains the sample photographs.

Background sediment sample X201 was collected along Third Creek to the south of the site across from a railroad spur. Sample X202 was collected where the southern drainage ditch intersects Third Creek. Sample X203 was collected where the small wetland overflows into Third Creek. Sample X204 was collected downstream from the site to identify if any site related contaminants are migrating off site. Sediment sample X205 was collected from the lime-lined northern drainage ditch where the quench water exited the main facility. The sample was

collected to identify if any contaminants from the previous operations remain in the ditch. The ditch was a grey color with a silty sediment possibly from the lime lining. There was a slight flow to the east. Sample X206 was collected where the lagoon discharged into the wetland.

Background soil sample X101 was collected from the St. Bethel Missionary Baptist Church Community Center property. Soil samples X102 through X112 were collected on site. Samples X106 - X112 were collected from the two waste piles. TCLP samples were collected from three of these locations. Figures 3 and 4 and Table 1 identify these sample locations.

### **3.3 Sample Results**

"Key Samples" are analytical data that indicate observed contamination and/or meet the Hazardous Ranking System (HRS) criteria of an observed release and are attributable to the site. Tables 2 - 5 identifies the key samples and TCLP analytical results from the 1998 sampling event along with the USEPA Superfund Chemical Data Matrix (SCDM) objectives. Appendix C contains the Target Compound List\Target Analyte List (TCL\TAL) and Appendix D contains all the analytical data. Neither of the two waste piles are considered as characteristic hazardous waste according to the TCLP results. However, contaminant concentrations exceeded USEPA benchmarks for PCBs.

Fifteen inorganic analytes and PCBs exceeded background levels. PCBs exceeded the benchmarks in all of the on-site soils except sample X109. The highest concentrations for most of the contaminants were found in the main waste pile. In addition, elevated levels of aluminum

were present (284,000 ppm). Sediment sample location X205, located at the quench water discharge point along the north drainage ditch, contained contaminant levels for cadmium, chromium, copper, lead, manganese, nickel and zinc at concentrations significantly higher than 3X the background levels. Sediment sample X206 located at the lagoon discharge point had copper concentrations above background levels. No contaminants were found in the downstream sediment sample.

#### **SECTION IV     SITE SOURCES**

Information obtained throughout this CERCLA investigation has identified two waste piles and a contaminated soil as the primary source types at the Steel City National Bank site. Given the limited nature of the Site Team Evaluation Prioritization, and consequently, the inability of this investigation to fully characterize the site, the possibility exists that future remedial investigative activity may provide additional information that will lead to a more comprehensive understanding of this source or the identification of additional areas of concern.

##### **4.1 Waste Piles**

The June 1998 sampling event established two waste pile sources. The first waste pile is one acre around the base. The average elevation is approximately 12 feet with the highest point at 23 feet. The estimated volume is 16,000 cubic yards. The pile is composed of gritty grey sand sized material. Chunks of metal, aluminum, zinc, slag and other metallic wastes are interspersed throughout the pile. Pockets of light blue, pink, brown and green grit are also present.

The second waste pile is 0.5 acres around the base. The estimated volume is 2,700 cubic yards. The second pile is composed of the same material as the first, but the waste is larger in grain size, and has much more building and general debris mixed in. TCLP analysis of both piles indicate that the piles are not considered as characteristic hazardous waste. However, PCBs, cadmium, chromium, copper and lead were found at levels significantly higher than 3X the background concentrations, with PCBs exceeding USEPA benchmarks in both piles. Very high concentrations of aluminum (284000 to 291000 ppm) are present in both waste piles.

#### **4.2 Contaminated Soil**

A contaminated soil source encompasses the area between the two waste piles and the main building. The area is approximately one acre. Contaminants include PCBs, cadmium, chromium, copper and lead. High levels of aluminum (258000 ppm) are present in the soils.

### **SECTION V -- MIGRATION PATHWAYS**

#### **5.1 Surface Water Pathway**

The surface water pathway consists of an overland flow and approximately .5 miles of Third Creek. After 0.5 miles, Third Creek becomes intercepted and channelized by storm water sewers. There are two overland flow segments leading to the surface water pathway. The southern ditch drains the south area of the site, along with the area around the second waste pile. The ditch discharges into Third Creek just inside the site boundaries at the southeast corner of the site. The ditch is poorly defined and appears to flow only during high precipitation events. The northern ditch is much more defined. It drained the quench water from the facility. The lime-lined ditch

neutralized the acidic contact waters prior to entering the lagoon. The pH values of the samples collected during the June 1998 STEP sampling event were as follows: the ditch at 6.6, the lagoon at 6.0 and the creek at 7.6, indicating no significant pH based concerns at the site.

The approximate 2.5 acre lagoon was utilized to cool the hot quench water, prior to re-use.

Overflow water from the lagoon flowed into a small wetland adjacent to the lagoon. The wetland is approximately 0.2 acres in size. It abuts the railroad tracks and has timber and vegetative debris along the railroad side. The wetland discharges into Third Creek via a short drainage ditch. Both drainage ditches are intermittent. There was no standing water in either the lagoon or the wetland during the June 1998 sampling event.

Third Creek is a perennial creek that flows from south to north and forms the east side of the site. Steep 10 to 20 foot bluff rise from the creek up to the main portion of the site. Most of the bank along the creek is covered with dense vegetation. None of the samples collected along the creek had contaminant concentrations above background. There are no records of Third Creek being a fishery. There are no terrestrially sensitive environments on or adjacent to the site. There are no additional wetlands on or adjacent to the site.

## **5.2 Soil Exposure Pathway**

Most of the facility is covered with pavement, gravel or vegetation. Fencing surrounds the west and south sides of the site. There is no fence along Third Creek. Barricades have been installed between the buildings and the waste piles to prevent access to the east half of the site. The site



contaminants include antimony, cadmium, chromium, copper, lead and PCBs.

The site is currently inactive except for a small company that repairs automobile parts storage racks for local automobile manufacturers. The company employs approximately 15 personnel and provides training for the crews in metal working. The nearest residences are approximately .5 miles to the west. There is approximately 7100 residents within one mile of the site. There are no schools, day-care facilities or residences within 200 feet of the site. There is no direct route for site contaminants to migrate to the residential areas. There are no known surface drinking water intakes along Third Creek.

### **5.3 Groundwater Pathway**

The regional geology consists of glacial sediments ranging in depth from 40 to 100 feet. Beneath the glacial sediments are Silurian dolomites which range in thickness from 350 feet to 400 feet. Maquoketa shale underlies the Silurian dolomites with thicknesses between 100 to 285 feet and acts as an aquitard between the glacial sediments and Silurian dolomites above and the Glenwood-St. Peter Group of the Ordovician system below.

Groundwater in the glacial sediments is found between 10 to 50 feet in depth. Groundwater in the Silurian dolomite is between 200 feet to 450 feet. Near surface groundwater flows toward the east and Third Creek. Drinking water for Chicago Heights is obtained from Lake Michigan intakes. There are no known drinking water wells within the four mile radius of the site.

#### **5.4 Air Pathway**

Poor maintenance of bag-house dust collectors resulted in black smoke emissions in 1984. There has been no air monitoring of the site since it closed down in 1984. There are no known records or complaints regarding odors from the site. The site remains inactive except for the small company in the west side of the site. No air samples were collected.

### **SECTION 6 ADDITIONAL RISK BASED OBJECTIVES**

#### **6.1 Introduction**

This section provides an evaluation which compares data generated during STEP activities with additional analytical benchmarks. These benchmarks compare soil, sediment, and/or groundwater data with specific state derived, risk based criteria. The objectives discussed in this section have not been used to assess the site for Hazard Ranking Systems (HRS) purposes. They are provided as additional references or to identify potential alternatives to the CERCLA remedial process.

#### **6.2 Tiered Approach To Corrective Action Objectives (TACO)**

The Illinois EPA's Tiered Approach to Corrective Action Objectives (TACO) guidance document (proposed rules under 35 IL Adm. Code Part 742), can be utilized to develop site specific remediation objectives. TACO is a three tiered approach utilizing an increased amount of site specific information for each successive tier. This section discusses the risk-based remediation objectives for the soil and groundwater pathways within Tier 1 of the TACO document. Tier 1 consists of "look-up" tables based on simple numeric models for either the Residential or Industrial/Commercial scenarios. The Illinois EPA Site Remediation Program

utilizes TACO derived objectives when determining site specific remedial practices and clean up objectives.

#### **6.2.1 TACO Soil Objectives**

The corrective action soil objectives for the Steel City site were obtained from the inhalation, ingestion and migration to groundwater routes of the Tier 1 Industrial/Commercial scenario. The site specific contaminants and the TACO Tier 1 objectives can be found in Tables 2 & 3. TCLP and pH derived TACO objectives can be found in Table 5. The Industrial/Commercial scenario is based on the present land usage for the site. Changes in land usage will require a reevaluation of the appropriate scenarios (Industrial/Commercial or Residential) and groundwater classes (Class I or II) by the Illinois EPA. Lead was found throughout most of the site in levels exceeding TACO objectives. In addition, PCBs, antimony, cadmium, chromium and copper exceeded TACO objectives at a number of sample locations on-site.

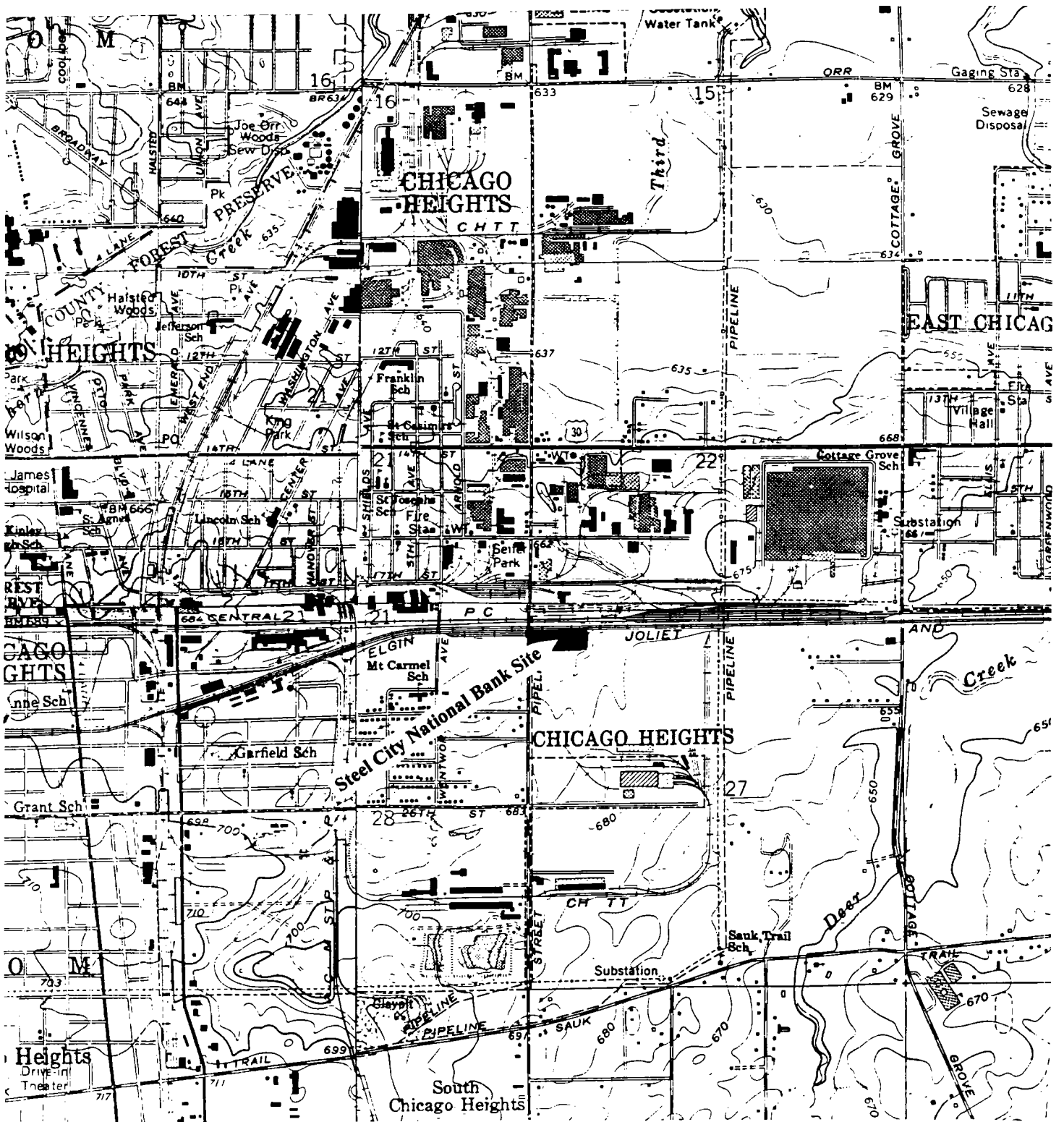
#### **6.2.2 IEPA Sediment Objectives**

Sediment cleanup objectives were provided by the IEPA/BOW/97-106 Evaluation of Illinois Sieved Stream Sediment Data. Sample X204 was collected at the facility discharge into the lime-lined ditch. Cadmium, chromium, copper, lead, manganese, nickel and zinc exceeded the sediment objectives. Sample X205, collected at the discharge of the lagoon, had copper at levels exceeding the objectives.



STATE LOCATION MAP

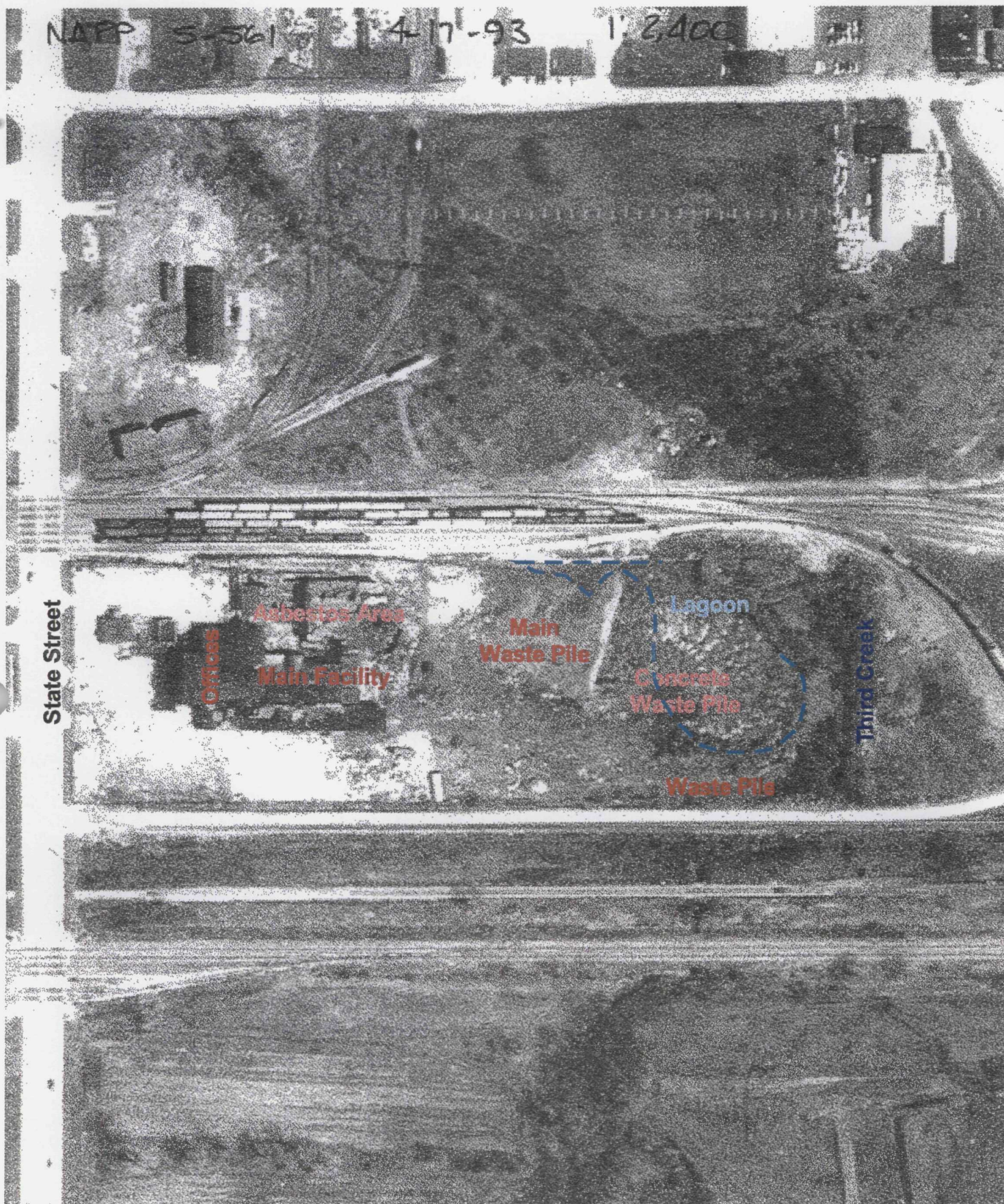
FIGURE 1



**SITE LOCATION MAP**

**FIGURE 2**





## IDOT AERIAL PHOTOGRAPHY

Approximate Scale: 1 : 2400

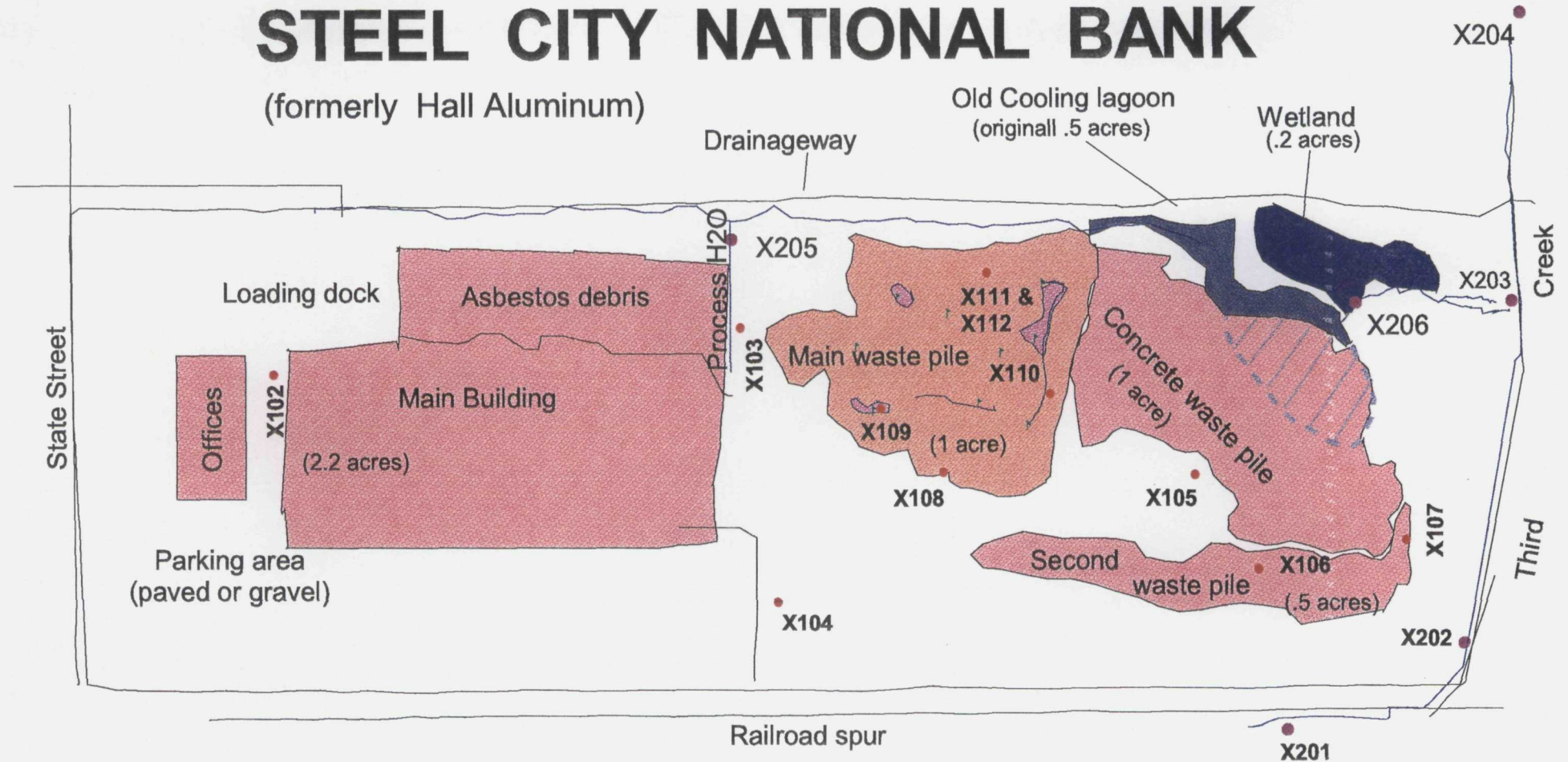
Date: 4 - 17 - 93

# FIGURE 3



# STEEL CITY NATIONAL BANK

(formerly Hall Aluminum)



-  Waste pile peaks
-  Waste pile valleys
-  Former Lagoon Boundary (Approx. 2.5 acres)
-  Soil sample
-  Sediment sample



Approximate scale 1" = 160 feet

## SITE LAYOUT & SAMPLE LOCATION MAP

FIGURE 4

## SAMPLE DESCRIPTIONS & LOCATIONS

### SOIL SAMPLES

SAMPLE	DEPTH	APPEARANCE	LOCATION	JUSTIFICATION
X101	1" - 3"	Loamy sand	Collected at Church Center at 1303 5th Ave.	Background sample
X102	1" - 3"	Grey silty clay	Collected at west end between bldgs next to blue cinderblock bldg	Characterize site soils
X103	1" - 3"	Grey clayey silt	Collected east of lime ditch between main waste pile and building foundation	Characterize site soils
X104	1" - 3"	<i>Bm/grey silt &amp; silt loam</i>	<i>Collected along south side of site &amp; east of bldgs</i>	<i>Characterize site soils</i>
X105	1" - 3"	Black oily / crusty soil	Collected southwest of concrete waste pile & between concrete waste pile and small waste pile	Characterize site soils
X106 TCLP	1" - 3"	Grey & silvery granular and powdery material w/ blue, pink, beige and sand-like materials mixed in	Collected from top of small waste pile at southeast corner - from on top of pile	Characterize waste pile
X107	1" - 3"	Bm/grey silt & silt loam w/ brick chips, and grey gritty material	Collected from east end of small waste pile	Characterize waste pile
X108	1" - 3"	Black tarry material on top of grey sandy grit	Collected from south face of main waste pile	Characterize waste pile
X109 TCLP	3'	Pink powdery material in grey/blue grit/ash material	Collected from SW peak of main waste pile	Characterize waste pile
X110	1" - 3"	Blue granular-powdery material w/ pink, beige & bm sandy grit	Collected from side of east face of main waste pile 1/2 way between two highest peaks	Characterize waste pile
X111 & X112 Duplicates	1" - 3"	Grey gritty sand-like material w/ blue, bm, pink & green grit	Collected from north flat washout & drainage area of main waste pile	Characterize waste pile

### SEDIMENT SAMPLES

SAMPLE	DEPTH	APPEARANCE	LOCATION	JUSTIFICATION
X201	0" - 6"	Grey muck	Collected from south & 100 feet west of south RR bridge	Sediment Background
X202	0" - 6"	Grey silty clay	Collected where south drainage ditch meets Third Creek	Characterize sediment in creek
X203	0" - 6"	Grey silty clay	Collected where north drainage ditch meets Third Creek	Characterize sediment in creek
X204	0" - 6"	Grey silty clay	Collected at north end - north of RR bridge	Characterize sediment in creek
X205	0" - 6"	Grey gritty material	Collected from neutralization ditch at north end	Characterize contaminants in drainage ditch
X206	0" - 6"	Sand on bm silty clay	Collected where Lagoon discharges to wetland	Characterize contaminants in drainage ditch

TABLE 1



# SOIL SAMPLE SUMMARY

Sample Location ID	Objectives *	X 101	X 102	X 103	X 104	X 105	X 106	X 107	X108	X 109	X 110	X 111	X 112
Lab Organic Sample ID	and	ECFK5	ECFK6	ECFK7	ECFK8	ECFK9	ECFK0	ECFL1	ECFL2	ECFL3	ECFL4	ECFL5	ECFL6
Lab Inorganic Sample ID	Benchmarks	MEBHR5	MEBHR6	MEBHR7	MEBHR8	MEBHR9	MEBHS0	MEBHS1	MEBHS2	MEBHS3	MEBHS4	MEBHS5	MEBHS6
Description	(ppb)	Background										I----- Duplicates -----I	
PESTICIDES & PCBs (ppb)													
Aroclor-1242	1000	--	--	--	--	--	1600 J	1300 J	--	--	--	820 J	740 J
Aroclor-1248	76	--	1600 J	--	--	15000 J	--	--	10000 J	--	--	--	--
Aroclor-1254	for all	--	1100	620	4500 J	7000 J	490	740	12000	--	68	160 J	200 J
Aroclor-1260	aroclor	--	--	370	--	--	--	--	--	--	--	--	--
INORGANICS (ppm)													
Aluminum	---	11900		258000	214000	234000	124000	291000	216000	231000	263000	284000	270000
	---												
Antimony	82 230	0.72 U	6.0 B	27.4	25.9	141	27.5	106	270	25.9	51.2	29.2	24.7
Barium	14000 41000	157								662			
Cadmium	20 290	1.3	8.2	19.7	30.3	181	22	29.6	108	4.3	18.6	8.9	9.6
Chromium	420 2900	20.4	121	467	492	500	174	333	576	553	291	385	422
Copper	8200	73.4	1080	9520	8440	7790	6550	18900	8180	4160	9540	9190	9160
	---												
Iron	---	18300				59700							
	---												
Lead	400 ---	167		1510	1340	1980	783	3470	1390	1300	1420	1060	1070
	---												
Manganese	8700 2900	369		1320	1320	3470		1410	1490		1350		
Mercury	61 170	0.12 U	0.35		0.69	9.1			5.7				
Nickel	4100 12000	20.8	71.5	379	314	400	204	433	664	115	557	353	426
Selenium	1000 2900	0.46 U	1.9 B	11.2	24.7	48.6	2.7		57.8	1.8	180.0	3.4	2.3
Silver	1000 2900	0.52 B	2.9 B	5.6	7	10	10	49.8	7.6	4.2	6.3	4.7	4.3
Zinc	61000 170000	252	1950	5220	5060	8870		12100	11300	3300	6670	6240	6470
Cyanide	4100 12000	0.36 B		1.2	1.4	1.9			1.7	1.1			

Samples Numbers Not Listed Above - did not contain contaminants above background levels

\* Cleanup Objectives were derived from the IEPA's "Tiered Approach to Corrective Action Objectives Guidance Document" (TACO).

Green Values are taken from Appendix B: Table B for Commercial Properties and is based on Class II Groundwater.

Blue Values are Superfund Chemical Data Matrix (SCDMs) Benchmarks.

RED Values Are Concentrations that have exceeded TACO and/or SCDMs Objectives or Guidelines

J Indicates an estimated concentration

TABLE 2



## INORGANIC SOIL SAMPLE SUMMARY

Sample Location ID	TACO Soil *	X 101	X 102	X 103	X 104	X 105	X 106	X 107	X108	X 109	X 110	X 111	X 112	USEPA SCDM Benchmarks
Organic Sample #	Cleanup	ECFK5	ECFK6	ECFK7	ECFK8	ECFK9	ECFL0	ECFL1	ECFL2	ECFL3	ECFL4	ECFL5	ECFL6	
Inorganic Sample #	Objectives	MEBHR5	MEBHR6	MEBHR7	MEBHR8	MEBHR9	MEBHS0	MEBHS1	MEBHS2	MEBHS3	MEBHS4	MEBHS5	MEBHS6	
Description	(ppm)						**TCLP			**TCLP	**TCLP	----- Duplicates -----		(ppm)
INORGANICS														
pH		7.2	6.9	7.9	7.6	7.4	7.8	7.2	7.5	7.2	7.2	7.6	7.8	
Aluminum		11900	--	258000	214000	234000	124000	291000	216000	231000	263000	284000	270000	
Antimony	82	0.72 U	--	27.4	25.9	141	27.5	106	270	25.9	51.2	29.2	24.7	230
Barium	14000	157	--	--	--	--	--	--	--	662	--	--	--	41000
Beryllium	1	0.69 B	--	--	--	4.1	--	--	--	--	2.1	--	2.2	0.14
Cadmium	200	1.3	8.2	19.7	30.3	181	22	29.6	108	4.3	18.6	8.9	9.6	290
Calcium		22600	81200	--	--	--	--	--	--	--	--	--	--	
Chromium	420	20.4	121	467	492	500	174	333	576	553	291	385	422	2900
Copper	8200	73.4	1080	9520	8440	7790	6550	18900	8180	4160	9540	9190	9160	
Iron		18300	--	--	--	59700	--	--	--	--	--	--	--	
Lead	400	167	--	1510	1340	1980	783	3470	1390	1300	1420	1060	1070	
Magnesium		10400	33100	--	--	--	--	--	--	--	--	--	--	
Manganese	8700	369	--	1320	1320	3470	--	1410	1490	--	1350	--	--	2900
Mercury	61	0.12 U	0.35	--	0.69	9.1	--	--	5.7	--	--	--	--	170
Nickel	4100	20.8	71.5	379	314	400	204	433	664	115	557	353	426	12000
Potassium		--	--	--	--	--	--	--	--	--	7770	--	--	
Selenium	1000	0.46 U	1.9 B	11.2	24.7	48.6	2.7	--	57.8	1.8	180	3.4	2.3	2900
Silver	1000	0.52 B	2.9 B	5.6	7	10	10	49.8	7.6	4.2	6.3	4.7	4.3	2900
Sodium		252 B	--	--	--	--	19700	--	--	--	6040.0	--	--	
Zinc	61000	252	1950	5220	5060	8870	--	12100	11300	3300	6670	6240	6470	170000
Cyanide	4100	0.36 B	--	1.2	1.4	1.9	--	--	1.7	1.1	--	--	--	12000

B Concentration is less than Contract Required Detection Level but greater than Instrument Detection Level

U Concentration is undetected

Values in RED have exceeded Benchmarks or Objectives

FIGURE 3



## SEDIMENT SAMPLE SUMMARY

Sample Location ID Lab Organic Sample ID Lab Inorganic Sample ID Description	BENCHMARKS (USEPA & IEPA)	X201 ECFL7 MEBHS7 Background	X202 ECFL8 MEBHS8	X203 ECFL9 MEBHS9	X204 ECFM0 MEBHT0	X205 ECFM1 MEBHT1	X206 ECFM2 MEBHT2
SEMIVOLATILES (ppb)	*						
Pentachlorophenol	--	--	--	120 J	--	--	--
Phenanthrene	850	42 J	330 J	300 J	--	--	--
Fluoranthene	2900	65 J	550 J	300 J	--	--	--
Pyrene	660	44 J	--	290 J	--	--	--
Benzo(a)anthracene	179	34 J	180 J	150 J	--	--	--
Chrysene	400	52 J	330 J	--	--	--	--
Benzo(b)fluoranthene	550	--	220 J	140 J	--	--	--
Benzo(k)fluoranthene	5500	--	240 J	94 J	--	--	--
Benzo(a)pyrene	430	50 J	260 J	--	--	--	--
PESTICIDES (ppb)	*						
4,4'-DDD	8	6.8	120	--	--	--	--
4,4'-DDT	1.6	--	14	1.5 J	--	--	--
INORGANICS (ppm)	**						
Antimony	--	0.88 U	--	--	--	25.5	--
Cadmium	2	0.79 B	--	--	--	4.7	--
Chromium	37	18.1	--	--	--	275	--
Copper	37	30.7	--	--	--	16100	151
Lead	60	71	--	--	--	435	--
Manganese	1100	301	--	--	--	1350	--
Nickel	26	21.1	--	--	--	170	--
Selenium	--	0.57 U	--	--	--	10.8	--
Zinc	170	130	--	--	--	11300	--

\* USEPA ECOTOX Thresholds

\*\* Evaluation of Illinois Sieved Stream Sediment Data, 1982 - 1995. (IEPA/BOW/97-106)

Values in RED have exceeded Benchmarks

TABLE 4

## TCLP SAMPLE SUMMARY

SAMPLE	X106				X109				X110			
	pH Specific Objectives		TCLP & Migration to Groundwater		pH Specific Objectives		TCLP & Migration to Groundwater		pH Specific Objectives		TCLP & Migration to Groundwater	
	pH Based Objectives	pH 7.8 Conc.	Remedial Objectives	Sample Conc.	pH Based Objectives	pH 7.2 Conc.	Remedial Objectives	Sample Conc.	pH Based Objectives	pH 7.2 Conc.	Remedial Objectives	Sample Conc.
<b>TCLP METALS</b>												
Barium	undetect		2	1.1	1700	662	2	0.748	undetect		2	2.26
Cadmium	430	22	undetect		11	4.3	0.005	0.0087	11	18.6	0.005	0.136
Chromium		174	0.1	0.0148	--	553	0.1	0.0852	--	291	0.1	0.014
Lead		783	undetect		--	1300	0.0075	0.229	--	1420	0.0075	3.3
Selenium	2.4	2.7	undetect		4.5	1.8	undetect		4.5	180	undetect	
Silver	110	10	undetect		13	4.2	undetect		13	6.3	undetect	
<b>ADDITIONAL METALS</b>												
Aluminum	--	12400			--	23100			--	263000		
Antimony	5	27.5			5	25.9			5	51.2		
Copper	330000	6550			200000	4160			200000	9540		
Nickel	3800	204			180	115			180	557		
Zinc	undetect				7500	3300			7500	6670		

**Yellow Columns** are TACO pH based Objectives based on sample pH & compared to Appendix B, Table C.

**Green Columns** are TACO Groundwater Migration based Objectives based on TCLP sample concentrations and compared to Appendix B, Table B, for the Industrial scenario.

**Values in RED** have exceeded Remedial Objectives.

TABLE 5

# **APPENDIX   A**

Historic Aerial Photography  
(IDOT photography)



NATP 5-561 4-17-93 1:2400

State Street

Offices

Main Facility

Main Waste Pile

Lagoon

Concrete Waste

Waste Pile

Third Creek

## IDOT AERIAL PHOTOGRAPHY

Approximate Scale: 1 : 2400

4 - 17 - 93





## IDOT AERIAL PHOTOGRAPHY

Approximate Scale: 1 : 2400

4 - 12 - 88





## IDOT AERIAL PHOTOGRAPHY

Approximate scale: 1 : 2400

10 - 27 - 67



# **APPENDIX B**

Sample Photos

<b>SITE NAME:</b> Steel City National Bank	
<b>SITE ILD:</b> 005246590	<b>COUNTY:</b> Cook

<b>DATE:</b> 6/3/98
<b>TIME:</b> 1045
<b>PHOTO BY:</b> Ted Prescott
<b>ROLL / PHOTO:</b> Not Taken
<b>SAMPLE:</b> X204
<b>DIRECTION:</b>
Down Gradient Sample

PHOTO NOT TAKEN

<b>DATE:</b> 6/3/98
<b>TIME:</b> 1115
<b>PHOTO BY:</b> Ted Prescott
<b>ROLL / PHOTO:</b> photo 2
<b>SAMPLE:</b> X203
<b>DIRECTION:</b> N
<b>COMMENTS:</b> Photo taken toward
east along west bank of Third
Creek at intersection of creek &
north drainage ditch.



**SITE NAME:** Steel City National Bank

**SITE ILB:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1145

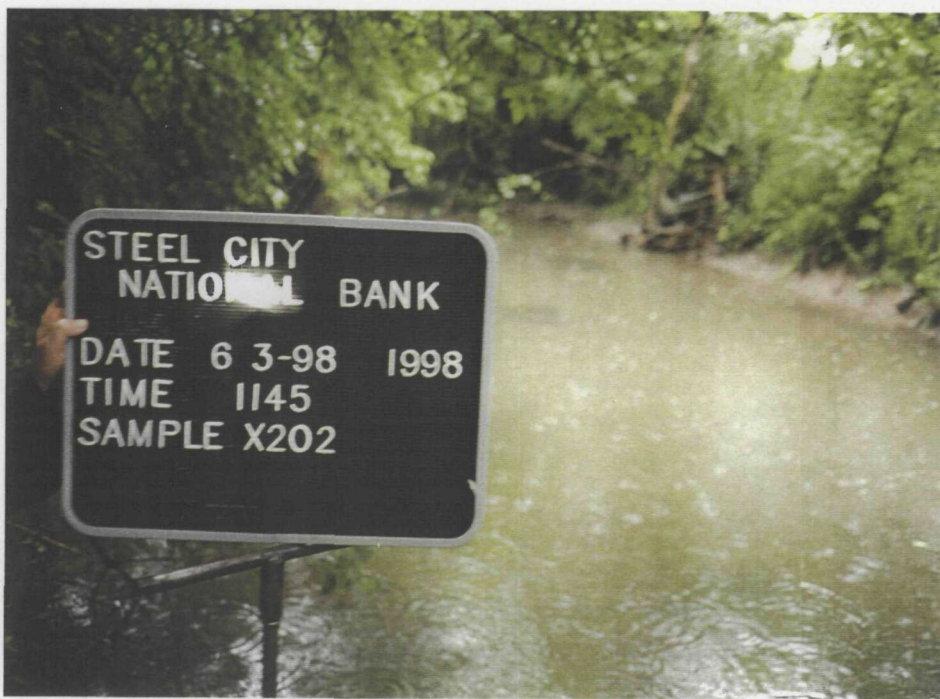
**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 2

**SAMPLE:** X202

**DIRECTION:** NE

**COMMENTS:** Photo taken toward  
northeast at Third Creek & south  
drainage ditch.



**DATE:** 6/3/98

**TIME:** 1200

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 3

**SAMPLE:** X201

**DIRECTION:** S

**COMMENTS:** Photo taken toward  
upstream portion of Third Creek.





**SITE NAME:** Steel City National Bank

**SITE ILB:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1215

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 4

**SAMPLE:** X205

**DIRECTION:** N

**COMMENTS:** Photo taken toward  
north showing lime-lined quench  
water drainage ditch.

**NOTE:** light blue colored material  
on side of ditch.



**DATE:** 6/3/98

**TIME:** 1215

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 5

**SAMPLE:** X205

**DIRECTION:** N

**COMMENTS:** Photo taken toward  
center of site.



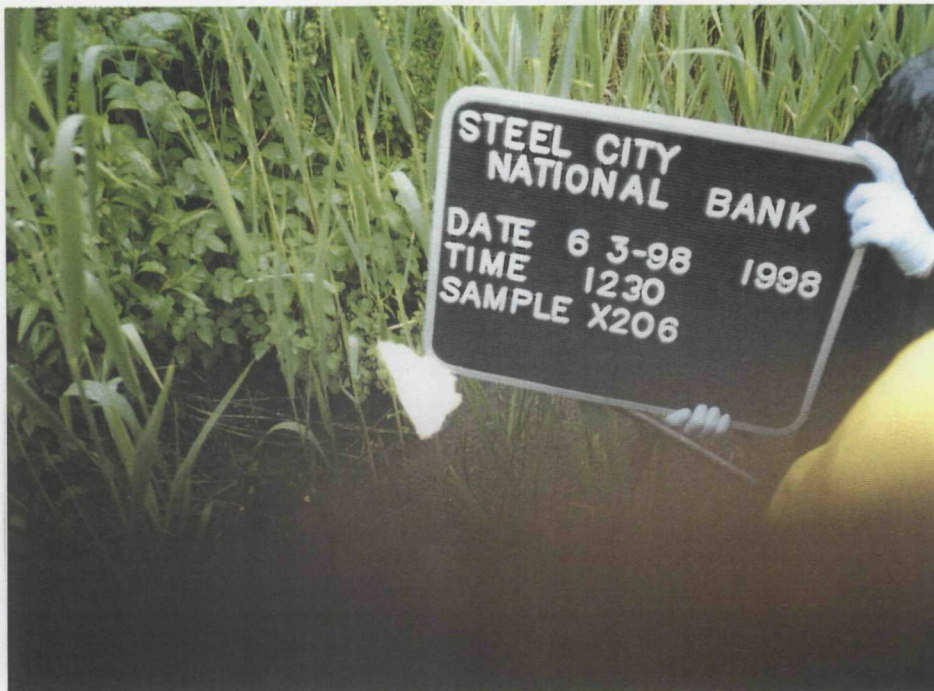


**SITE NAME:** Steel City National Bank

**SITE ILB:** 005246590

**COUNTY:** Cook

<b>DATE:</b> 6/3/98
<b>TIME:</b> 1230
<b>PHOTO BY:</b> Ted Prescott
<b>ROLL / PHOTO :</b> photo 6
<b>SAMPLE:</b> X206
<b>DIRECTION:</b> N
<b>COMMENTS:</b> Photo taken toward north into west edge of wetland.



<b>DATE:</b> 6/3/98
<b>TIME:</b> 1230
<b>PHOTO BY:</b> Ted Prescott
<b>ROLL / PHOTO:</b> photo 7
<b>SAMPLE:</b> X206
<b>DIRECTION:</b> W
<b>COMMENTS:</b> Photo taken toward the discharge point of the lagoon.





**SITE NAME:** Steel City National Bank

**SITE ILD:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1300

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 8

**SAMPLE:** X111 & X112

**DIRECTION:** S

**COMMENTS:** Photo taken toward  
center of main waste pile.

**NOTE:** composition & material  
in pile.



**DATE:** 6/3/98

**TIME:** 1300

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 9

**SAMPLE:** X111 & X112

**DIRECTION:** N

**COMMENTS:** Photo taken toward  
drainage area into north drainage  
Ditch.





**SITE NAME:** Steel City National Bank

**SITE ILD:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1315

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 10

**SAMPLE:** X110

**DIRECTION:** N

**COMMENTS:** Photo taken along  
east side of main waste pile.



**DATE:** 6/3/98

**TIME:** 1330

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 11

**SAMPLE:** X109

**DIRECTION:** E

**COMMENTS:** along top of  
main waste pile.

**NOTE:** discoloration in materials.





**SITE NAME:** Steel City National Bank

**SITE ILB:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1330

**PHOTO BY:** Ted Prescott

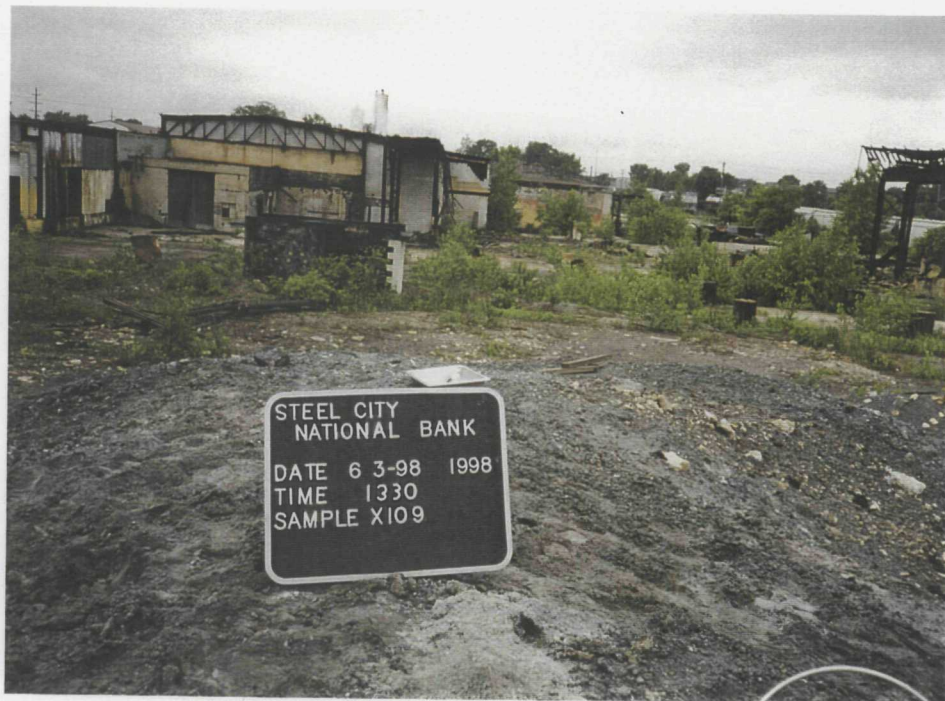
**ROLL / PHOTO:** photo 12

**SAMPLE:** X109

**DIRECTION:** W

**COMMENTS:** Photo taken toward  
the main facility & plant.

**NOTE:** structures to right were  
the main reclamation plant.



**DATE:** 6/3/98

**TIME:** 1430

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 13

**SAMPLE:** X106

**DIRECTION:** W

**COMMENTS:** Photo taken toward  
main facility from second waste  
pile.





**SITE NAME:** Steel City National Bank

**SITE ILD:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1430

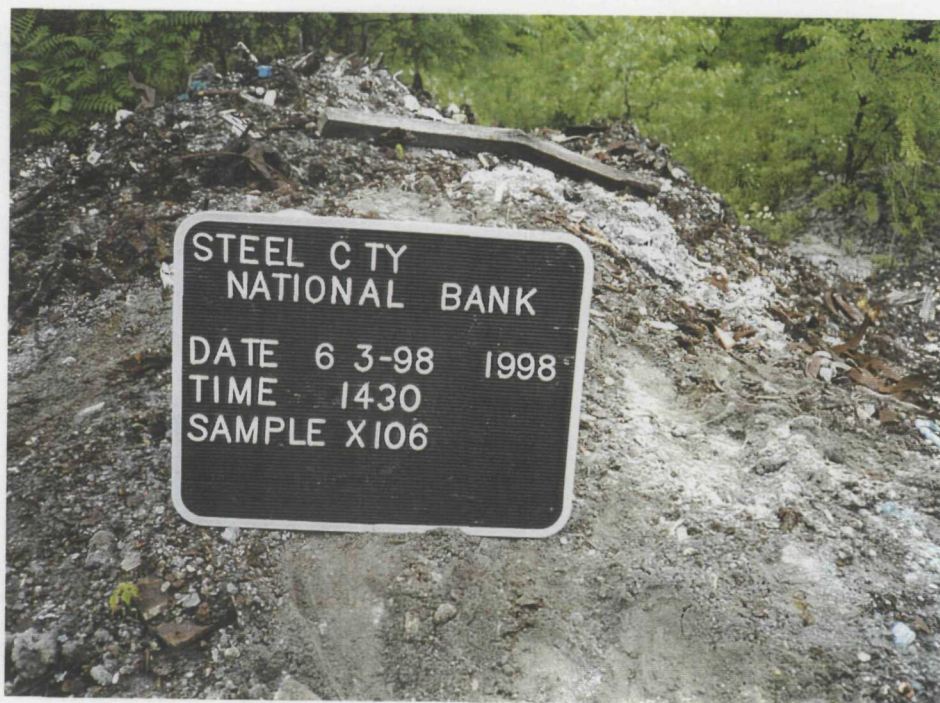
**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 14

**SAMPLE:** X106

**DIRECTION:** E

**COMMENTS:** Taken from top of  
second waste pile.



**DATE:** 6/3/98

**TIME:** 1415

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 15

**SAMPLE:** X107

**DIRECTION:** N

**COMMENTS:** taken from the  
east side of the second waste pile.





**SITE NAME:** Steel City National Bank

**SITE ILD:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1415

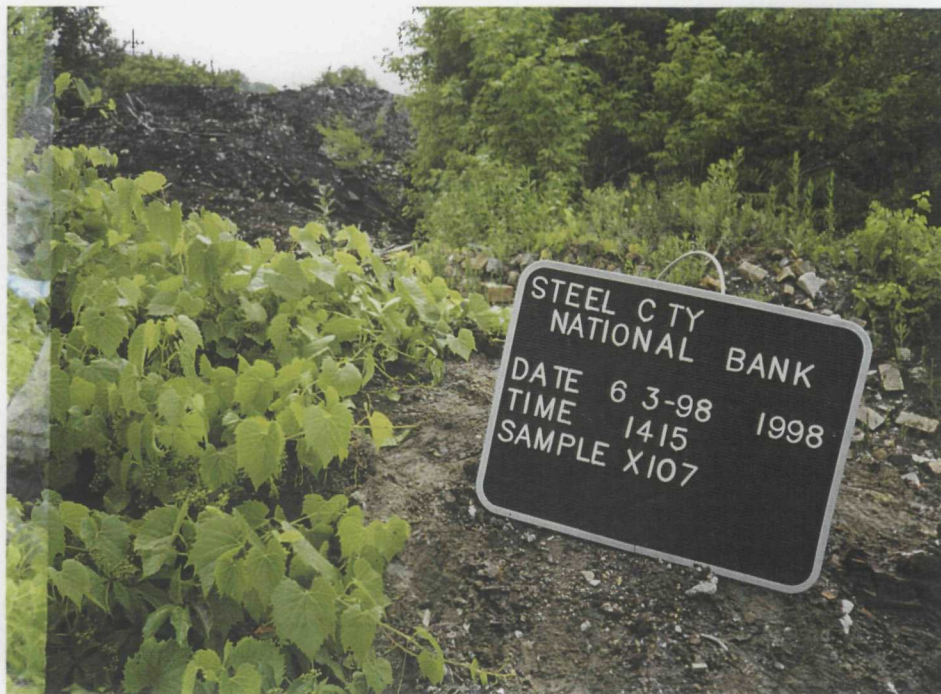
**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 16

**SAMPLE:** X107

**DIRECTION:** N

**COMMENTS:** Photo taken along  
east side of second waste pile.



**DATE:** 6/3/98

**TIME:** 1445

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 17

**SAMPLE:** X105

**DIRECTION:** W

**COMMENTS:** Photo taken toward  
main facility from north of  
second waste pile.





**SITE NAME:** Steel City National Bank

**SITE ILD:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1500

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 18

**SAMPLE:** X108

**DIRECTION:** N

**COMMENTS:** Photo taken toward  
main waste pile - of asphalt like  
material piled adjacent to main  
pile.



**DATE:** 6/3/98

**TIME:** 1515

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 19

**SAMPLE:** X104

**DIRECTION:** S

**COMMENTS:** Photo taken toward  
wooden foundation of former  
building.





**SITE NAME:** Steel City National Bank

**SITE ILD:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1515

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 20

**SAMPLE:** X104

**DIRECTION:** W

**COMMENTS:** Photo taken toward  
State Street.



**DATE:** 6/3/98

**TIME:** 1530

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 21

**SAMPLE:** X103

**DIRECTION:** E

**COMMENTS:** Photo taken toward  
main waste pile.





**SITE NAME:** Steel City National Bank

**SITE ILD:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1530

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 22

**SAMPLE:** X 103

**DIRECTION:** W

**COMMENTS:** Photo taken toward  
main facility buildings.



**DATE:** 6/3/98

**TIME:** 1545

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 23

**SAMPLE:** X102

**DIRECTION:** S

**COMMENTS:** Photo taken  
between offices & main building.





**SITE NAME:** Steel City National Bank

**SITE ILD:** 005246590

**COUNTY:** Cook

**DATE:** 6/3/98

**TIME:** 1620

**PHOTO BY:** Ted Prescott

**ROLL / PHOTO:** photo 24

**SAMPLE:** X101

**DIRECTION:** E

**COMMENTS:** background



**DATE:**

**TIME:**

**PHOTO BY:**

**ROLL / PHOTO:**

**SAMPLE:**

**DIRECTION:**

**COMMENTS:**

# **APPENDIX C**

Target Compound List / Target Analyte List  
(TCL / TAL)

## **TARGET COMPOUND LIST**

### **Volatile Target Compounds**

Chloromethane	1,2-Dichloropropane
Bromomethane	cis-1,3-Dichloropropene
Vinyl Chloride	Trichloroethene
Chloroethane	Dibromochloromethane
Methylene Chloride	1,1,2-Trichloroethane
Acetone	Benzene
Carbon Disulfide	trans-1,3-Dichloropropene
1,1-Dichloroethene	Bromoform
1,1-Dichloroethane	4-Methyl-2-pentanone
1,2-Dichloroethene (total)	2-Hexanone
Chloroform	Tetrachloroethene
1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
2-Butanone	Toluene
1,1,1-Trichloroethane	Chlorobenzene
Carbon Tetrachloride	Ethylbenzene
Vinyl Acetate	Styrene
Bromodichloromethane	Xylenes (total)

### **Base/Neutral Target Compounds**

Hexachloroethane	2,4-Dinitrotoluene
bis(2-Chloroethyl) Ether	Diethylphthalate
Benzyl Alcohol	N-Nitrosodiphenylamine
bis (2-Chloroisopropyl) Ether	Hexachlorobenzene
N-Nitroso-Di-n-Propylamine	Phenanthrene
Nitrobenzene	4-Bromophenyl-phenylether
Hexachlorobutadiene	Anthracene



2-Methylnaphthalene	Di-n-Butylphthalate
1,2,4-Trichlorobenzene	Fluoranthene
Isophorone	Pyrene
Naphthalene	Butylbenzylphthalate
4-Chloroaniline	bis(2-Ethylhexyl)Phthalate
bis(2-chloroethoxy)Methane	Chrysene
Hexachlorocyclopentadiene	Benzo(a)Anthracene
2-Chloronaphthalene	3-3'-Dichlorobenzidene
2-Nitroaniline	Di-n-Octyl Phthalate
Acenaphthylene	Benzo(b)Fluoranthene
3-Nitroaniline	Benzo(k)Fluoranthene
Acenaphthene	Benzo(a)Pyrene
Dibenzofuran	Ideno(1,2,3-cd)Pyrene
Dimethyl Phthalate	Dibenz(a,h)Anthracene
2,6-Dinitrotoluene	Benzo(g,h,i)Perylene
Fluorene	1,2-Dichlorobenzene
4-Nitroaniline	1,3-Dichlorobenzene
4-Chlorophenyl-phenylether	1,4-Dichlorobenzene

#### Acid Target Compounds

Benzoic Acid	2,4,6-Trichlorophenol
Phenol	2,4,5-Trichlorophenol
2-Chlorophenol	4-Chloro-3-methylphenol
2-Nitrophenol	2,4-Dinitrophenol
2-Methylphenol	2-Methyl-4,6-dinitrophenol
2,4-Dimethylphenol	Pentachlorophenol
4-Methylphenol	4-Nitrophenol
2,4-Dichlorophenol	

### Pesticide/PCB Target Compounds

alpha-BHC	Endrin Ketone
beta-BHC	Endosulfan Sulfate
delta-BHC	Methoxychlor
gamma-BHC (Lindane)	alpha-Chlordane
Heptachlor	gamma-Chlordane
Aldrin	Toxaphene
Heptachlor epoxide	Aroclor-1016
Endosulfan I	Aroclor-1221
4,4'-DDE	Aroclor-1232
Dieldrin	Aroclor-1242
Endrin	Aroclor-1248
4,4'-DDD	Aroclor-1254
Endosulfan II	Aroclor-1260
4,4'-DDT	

### Inorganic Target Compounds

Aluminum	Manganese
Antimony	Mercury
Arsenic	Nickel
Barium	Potassium
Beryllium	Selenium
Cadmium	Silver
Calcium	Sodium
Chromium	Thallium
Cobalt	Vanadium
Copper	Zinc
Iron	Cyanide
Lead	Sulfide
Magnesium	

## DATA QUALIFIERS

QUALIFIER	DEFINITION ORGANICS	DEFINITION INORGANICS
U	Compound was tested for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For soil samples subjected to GPC clean-up procedures, the CRQL is also multiplied by two, to account for the fact that only half of the extract is recovered.	Analyte was analyzed for but not detected.
J	Estimated value. Used when estimating a concentration for tentatively identified compounds (TICS) where a 1:1 response is assumed or when the mass spectral data indicate the presence of a compound that meets the identification criteria and the result is less than the sample quantitation limit but greater than zero. Used in data validation when the quality control data indicate that a value may not be accurate.	Estimated value. Used in data validation when the quality control data indicate that a value may not be accurate.
C	This flag applies to pesticide results where the identification is confirmed by GC/MS.	Method qualifier indicates analysis by the Manual Spectrophotometric method.
B	Analyte was found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	The reported value is less than the CRDL but greater than the instrument detection limit (IDL).
D	Identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor as in the "E" flag, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values are flagged with the "D" flag.	Not used.
E	Identifies compounds whose concentrations exceed the calibration range for that specific analysis. All extracts containing compounds exceeding the calibration range must be diluted and analyzed again. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses must be reported on separate Forms I. The Form I for the diluted sample must have the "DL" suffix appended to the sample number.	The reported value is estimated because of the presence of interference.
A	This flag indicates that a TIC is a suspected aldol concentration product formed by the reaction of the solvents used to process the sample in the laboratory.	Method qualifier indicates analysis by Flame Atomic Absorption (AA).
M	Not used.	Duplicate injection (a QC parameter not met).

N	Not used	Spiked sample (a QC parameter not met).
S	Not used.	The reported value was determined by the Method of Standard Additions (MSA).
W	Not used.	Post digestion spike for Furnace AA analysis (a QC parameter) is out of control limits of 85% to 115% recovery, while sample absorbance is less than 50% of spike absorbance.
.	Not used.	Duplicate analysis (a QC parameter not within control limits).
+	Not used.	Correlation coefficient for MSA (a QC parameter) is less than 0.995.
P	Not used.	Method qualifier indicates analysis by ICP (Inductively Coupled Plasma) Spectroscopy.
CV	Not used.	Method qualifier indicates analysis by Cold Vapor AA.
AV	Not used.	Method qualifier indicates analysis by Automated Cold Vapor AA.
AS	Not used.	Method qualifier indicates analysis by Semi-Automated Cold Spectrophotometry.
T	Not used.	Method qualifier indicates Titrimetric analysis.
NR	The analyte was not required to be analyzed.	The analyte was not required to be analyzed.
R	Rejected data. The QC parameters indicate that the data is not usable for any purpose.	Rejected data. The QC parameters indicate that the data is not usable for any purpose.